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[54] **NON-INVASIVE FETAL PROBE**

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[57] **ABSTRACT**

A non-invasive fetal probe attaching to the presenting part of a fetus and sensing at least one fetal parameter during labor and delivery. The body of the probe is formed of a conductive hydrogel which is adhesive to both wet and dry surfaces. The hydrogel is either formed into a suction cup shape or is coated on the inside surface of a suction cup shell. It is the combination of both the suction cup shape, which initially holds the probe to the fetus, and the hydrogel material, which allows for increased adhesion in the wet environment of the mother's womb, which enables the probe to be securely attached to the fetus during labor and delivery. In one specific embodiment, the probe is a non-invasive fetal heart rate probe having a maternal heart rate sensor which detects the maternal heart rate to serve as a reference and a fetal heart rate sensor for monitoring the fetal heart rate. The maternal and fetal heart rate sensors are separated by an electrical insulation material which can form the suction cup.

33 Claims, 5 Drawing Sheets